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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,063

01/09/2007

Michael Hopkinson

70346

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86344

7590

02/14/2011

Syngenta Crop Protection, Inc.,  
Patent and Trademark Department  
410 Swing Road  
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EXAMINER

BROWN, COURTNEY A

ART UNIT

PAPER NUMBER

1617

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DELIVERY MODE

02/14/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/580,063	HOPKINSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	COURTNEY BROWN	1617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 and 30-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 15-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Acknowledgement of Receipt/Status of Claims*

This Office Action is in response to the amendment filed November 11, 2010. Claims 1-32 are pending in the application. Claim 6 has been amended. Claims 12-14 and 30-32 have been withdrawn as being directed to a non-elected invention. Claims **1-11 and 15-29** are being examined for patentability.

### *Maintained Rejections*

Applicant's arguments filed November 11, 2010 are acknowledged and have been fully considered.

The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set of rejections and/or objections presently being applied to the instant application. The rejection of claims 1-13 under 35 U.S.C. 103(a) as being unpatentable over Kimura (US Patent 6,521,568 B1) in view of Mayer et al. (US Patent 6,030,924,) and further in view of Deming et al. (US Patent 5,354,742) **is maintained.**

The rejection of Claims 1,2,8-11,15,16, and 19-29 under 35 U.S.C. 103(a) as being unpatentable over Hacker et al. (US 2003/0186816 A1, previously cited in the Office Action of June 5, 2008) in view of Hopkinson et al. (US Patent 6,746,988 B2) **is maintained.**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-11, 15, and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hacker et al. (US 2003/0186816 A1, of record) in view Nabors et al. (US 2005/0233907 A1, of record).**

***Applicant's Invention***

Applicant is claiming a suspension concentrate comprising a herbicidally effective amount of mesotrione, as well as agrochemically acceptable salts thereof, having an average particle size of less than 1 micron and a dispersing agent.

***Determination of the scope and the content of the prior art  
(MPEP 2141.01)***

Hacker et al. teach herbicide combinations comprising active compounds such as mesotrione, glufosinate, glyphosate as well as specific sulfonylurea herbicides (abstract, claims **1,5-9,11,24,25,27, and 29** of instant application), and benoxacor ([0087], safener component, claims **19, 22, and 23** of instant application) that can be formulated as a suspension concentrate and suspoemulsion ([0074], claims **1-11, 15, and 19-29** of instant application). Specifically, Hacker et al. teach a dispersion concentrate mixture that is ground in a ball mill to a fineness of below 5 microns ([0172],

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limitation of instant claim **1**). Hacker et al. teach the preparation of emulsifiable concentrates with the addition of one or more ionic or nonionic surfactants ([0150], emulsifier component of instant application, claim **15** of instant application). Additionally, Hacket et al. teach that the active combinations can exist together with further agrochemically active compounds, additives, and/or customary formulation auxiliaries which are applied as a dilution with water ([0145], claims **10 and 28** of instant application).

Regarding the claimed particle size, Hacker et al. teach a dispersion concentrate mixture that is ground in a ball mill to a fineness of below 5 microns ([0172]. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to engage in routine experimentation to determine optimal or workable diameter sizes for the mesitrione that produce expected results. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Aller, 220 F. 2d 454, 105 USPQ 233 (CCPA 1955).

***Ascertainment of the difference between the prior art and the claims  
(MPEP 2141.02)***

The difference between the invention of the instant application and that of Hacker et al. is that the instant invention requires an acetamide herbicide component,

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specifically mixtures of metalachlor (S) and (R) isomers. However, compositions comprising an acetamide herbicide component, specifically mixtures of metalachlor (S) and (R) isomers was known in the prior art. Nabors et al. teach novel synergistic compositions comprising acetamide herbicides such as mixtures of the (R) and (S) isomers of metalachlor wherein the ratio of (S)-2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)acetamide to (R)-2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)acetamide is in the range of from 50-100% to 50-0%, preferably 70-100% to 30-0% and more preferably 80-100% to 20-0% for the selective control of weeds ([0010], claims **19-21** of instant application). Nabors et al. also teach the use of co-herbicides such as mesotrione, glyphosate, and glufosinate ([0020]) and formulating the synergistic composition into a suspoemulsion ([0036]).

### ***Finding of prima facie obviousness***

#### ***Rationale and Motivation (MPEP 2142-2143)***

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of the two cited references to arrive at a suspoemulsion pesticidal formulation that has an acetamide herbicide component. Both references teach the use of active compounds mesitrione, glyphosate, and glufosinate and the possibility of suspoemulsion formulations. One would have been motivated to make this combination in order to receive the expected benefit of having a pesticidal composition that is able to control the majority of weeds occurring in crops of cultivated plants due to the selectivity of acetamide herbicides (see [0001] of Nabors et

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al.). Further, in view of *In re Kerkhoven*, 205 USPQ 1069 (C.C.P.A. 1980), it is *prima facie* obvious to combine two or more compositions each of which is taught by prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose. The idea of combining them flows logically from their having been individually taught in prior art, thus claims that requires no more than mixing together two or three conventional growth regulators set forth *prima facie* obvious subject matter.

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the teachings of the cited references, especially in the absence of evidence to the contrary.

**Claims 1,2,8-11,15,16, and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hacker et al. (US 2003/0186816 A1, of record) in view of Hopkinson et al. (US Patent 6,746,988 B2, of record).**

***Applicant's Invention***

Applicant is claiming a suspension concentrate comprising a herbicidally effective amount of mesotrione, as well as agrochemically acceptable salts thereof, having an average particle size of less than 1 micron and a dispersing agent.

***Determination of the scope and the content of the prior art  
(MPEP 2141.01)***

The teachings of Hacker et al. are incorporated herein by reference and are therefore applied in the instant rejection as discussed above.

***Ascertainment of the difference between the prior art and the claims  
(MPEP 2141.02)***

The difference between the invention of the instant application and that of Hacker et al. is that the instant invention requires that the mesitrione component has an average particle size of less than 1 micron. However, the use of compositions with Hopkinson et al. teach the use of mesotrione as exemplary herbicides (column 8, lines 37-59) with an average particle size of about 1 to about 20 microns, preferably about 1 to about 15 microns, more preferably about 2 to about 10 microns (see column 10, lines 10-32).

***Finding of prima facie obviousness***

***Rationale and Motivation (MPEP 2142-2143)***

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of the two cited references to arrive at a pesticidal composition having an active component has an average particle size of less than 1 micron. Hopkinson et al. teach that if a water-insoluble or oil-insoluble solid agriculturally active compound is present, milling a slurry of the agriculturally active compound, water, defoamer, and all or a portion of the water soluble surfactants may be indicated to achieve a desired particle size (column 10, lines 9-32). One would have been motivated to make this combination in order to receive the expected benefit of increasing the solubility, dispersibility, and bioavailability of the active compound particles due to reducing the particle size. Further, Hopkins et al., like the instant invention, teach the formation of suspoemulsions (column 10, lines 35-46) and the use of mesotrione as an active. Thus, in view of *In re Kerkhoven*, 205 USPQ 1069 (C.C.P.A. 1980), it is *prima facie* obvious to combine two or more compositions each of which is taught by prior art to be useful for the same purpose in order to form a third composition that is to be used for the very same purpose. The idea of combining them flows logically from their having been individually taught in prior art, thus claims that requires no more than mixing together two or three conventional growth regulators set forth *prima facie* obvious subject matter.

Regarding the claimed particle size, Hopkins et al. teach the use of mesotrione as exemplary herbicides with an average particle size of about 1 to about 20 microns. It

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would have been obvious to one of ordinary skill in the art at the time of the invention to engage in routine experimentation to determine optimal or workable diameter sizes for the mesitrione that produce expected results. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In re Aller, 220 F. 2d 454, 105 USPQ 233 (CCPA 1955).

In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the teachings of the cited references, especially in the absence of evidence to the contrary.

### ***Examiner's Response to Applicant's Remarks***

Applicant's arguments filed on 11/11/2010, with respect to the 103 rejection of claims 1-11, 15, and 19-29 under 35 U.S.C. 103(a) as being unpatentable over Hacker et al. (US 2003/0186816 A1, of record) in view Nabors et al. (US 2005/0233907 A1, of record) have been fully considered but they are not persuasive.

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Applicant states that Hacker et al. (Hacker) relates to 3-way (component A, B and C) herbicide combinations comprising specific sulfonylurea herbicides and argues that it is mentioned that component C may be one of 57 compounds, of which mesotrione just happens to be one (compound C8). Applicant argues that there is no specific teaching in Hacker of a suspension concentrate or suspoemulsion comprising mesotrione and that the secondary references to Nabors, Comes and Hopkinson et al. do not remedy the deficiencies of Hacker. However, the Examiner disagrees with Applicant's argument because Hacker et al. does teach herbicide combinations comprising active compounds such as mesotrione, glufosinate, glyphosate (see abstract) that can be formulated as a suspension concentrate and suspoemulsion as instantly claimed ([0074]). The Examiner wants to remind Applicant that when considering a prior art's teaching; the whole reference is considered. Further, according to MPEP 2123, "patents are relevant as prior art for all they contain" Thus, the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

Applicant further argues that the citation of Hopkinson for the proposition that the use of mesotrione is taught as an agriculturally active compound having an average particle size of about 1 to about 20 micron is included in a long list of other agriculturally active compounds including fungicides, insecticides and other herbicides. Applicant further argues that there is no teaching regarding submicron particle sizes for any of the agriculturally active compounds is provided. However, the Examiner disagrees with Applicant's argument. Regarding the claimed particle size, Hopkins et al. teach the use

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of mesotrione as exemplary herbicides with an average particle size of about 1 to about 20 microns. It would have been obvious to one of ordinary skill in the art at the time of the invention to engage in routine experimentation to determine optimal or workable diameter sizes for the mesitrione that produce expected results. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. In *re* Aller, 220 F. 2d 454, 105 USPQ 233 (CCPA 1955). Further, Hopkins et al., like the instant invention, teach the formation of suspoemulsions wherein the solid active particulate compounds are dispersed in one or both liquid phases (column 10, lines 35-46).

Applicant argues that It is only with the benefit of hindsight of the present invention that the Examiner infers one of ordinary skill would consider selecting mesotrione as component C and prepare the three-way compositions as SC or SE formulations. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

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Applicant also argues that Hacker alone or in any combination with Nabors,

Comes or Hopkinson does not teach or suggest:

- claim 2 - a submicron mesotrione SC having an average particle size of 800 nanometers;
- claims 8 - 9 - a submicron mesotrione SC further comprising a water-soluble active ingredient such as glyphosate or glufosinate,
- claims 10 - 11 - a pesticidal composition prepared by diluting a submicron mesotrione SC in water,
- claim 16 - a submicron mesotrione SE having an average particle size of 800 nanometers;
- claims 19 - 23 - a submicron mesotrione SE further comprising at least one liquid, water insoluble active ingredient selected from acetamide herbicides and safeners including S- metolachlor and benoxacor
- claims 24 - 25- a submicron mesotrione SE further comprising at least one solid, water insoluble active ingredient such as a triazine herbicide,
- 
- claims 26 - 27- a submicron mesotrione SE further comprising a water soluble active ingredient in the aqueous phase such as glyphosate or glufosinate, and claims 28 - 29 - a pesticidal composition prepared by diluting a submicron mesotrione SE in water.

However, the Examiner wants to refer Applicant back the rejection of record, filed May 11, 2010 as well as the instant rejection wherein the Examiner has indicated that each of the aforementioned limitations are taught by the prior art of record.

Finally, with regard to the mesotrione containing formulations, Applicant argues that the experiments and data referred to in Table 2 of the description show the redispersion properties of sediment material and how these are improved when sub-micron mesotrione is used. In the sediment, Applicant argues that the particle phase volume is very high and the redispersibility rather than being governed by particle size per se is actually governed by the cohesively of the sediment, that is by unpredictable

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rheological properties. Thus, Applicant concludes that the technical success achieved cannot be predicted on the basis of the teachings of Hacker and the secondary references as these are silent as to the rheological properties of submicron mesotrione formulations. However, the data presented in Table 2 of the instant specification is not persuasive. Instant claim 1 discloses a particle size of less than 1 micron and comparative example (1-2) has a particle size of 0.925 (see the Nanosizer Z-average measurements of Table 1, page 18 of the instant specification). The showing in Table 2 is not commensurate in scope with the claimed invention. Only one particle size is exemplified. However, a range of less than one micron is claimed. Applicants have not provided any evidence that the unexpected result observed for the particle size of 0.925 is representative of the full scope of the claimed invention.

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***Conclusion***

No claims are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney A. Brown whose telephone number is 571-270-3284. The examiner can normally be reached on 9:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fereydoun Sajjadi can be reached on 571-272-3311. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Courtney A. Brown  
Patent Examiner  
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/Janet L. Epps-Smith/  
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